

ARIZONA SENTINEL.

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SMELL HINTS FOR FARMERS.

A Lesson in Intensive Farming by
R. H. Forbes, Director and
Chemist of Agricultural
Experiment Station

University of Arizona,
January 15, 1907.

Just west of Yuma, Arizona, in the alluvial
flood-plain of the Colorado, lies a little farm
of 7.2 acres which on May 1, 1905, was virgin
bottomland, covered with saltweed, arrow-
weed and creosote bushes. The original
purpose of the tract was for planting selected
varieties of date palms imported by the U. S.
Department of Agriculture from the Old
World. The Experiment Station, May 2, be-
gan preparing the ground, and on May 20 the
work of leveling, boring and irrigating the
tract and the planting of 152 palms, was
completed.

THE PLAN OF WORK.

Recognizing, however, that a farmer with
his living to make meantime, cannot afford
to wait for an orchard to come into bearing,
it was planned to plant crops for quick re-
turns between the tree-rows, thus putting the
work on a feasible basis from the small farm-
er's point of view. In order to economize
around the irrigating borders were so placed
as to coincide with the rows of palms, thus
utilizing space otherwise usually wasted.
The tract was divided by the borders into
lots, for the most part one-half an acre in
size, irrigating water from the Colorado
Valley P. & I. Canal was obtained in the
season of 1905, and E. Crane, himself a
Yuma Valley farmer, undertook the care of
what was nicknamed the "play farm."
In addition, he had a small tract of 1.2
acres, well as in the intensive character
of the work planned, this "farm" is the op-
posite of the usual small farm. The prevailing
crops of the region are alfalfa,
corn, barley, and forages in general, compar-
atively little attention is given to fruiting
trees and fruits. With the cost of leveling
land in this region is high, rarely falling be-
low twenty dollars an acre, current prices
for labor and teams. Moreover, the cost, ex-
clusive of maintenance, of the Government
irrigating system now under construction
will be about \$5.00 an acre annually for ten
years. To meet these and other heavy items
of expense in connection with the establish-
ment of a farm in this region, intensive crops
of a more remunerative character than these
now in vogue, are essential. It was partly,
therefore, as an object lesson bearing upon
these financial aspects of the enterprise, that
this cultural work was planned.

RECLAMATION OF THE GROUND.

The soil of our tract, a warm, sandy loam
well adapted to gardening operations, was
levelled, ditched and bordered at a contract
price of \$17.20 an acre, considerably less than
the average for the locality, reckoning the
labor of men and teams at current rates. In
addition, barbed wire and post-and-rail fence
cost \$80.14 for headstake cost \$28.57;
a drive well for water, a ditch, a pump and
a barrel, \$18.45; a small lumber
two-room house, including five and one-half
days carpenter labor, \$10.00; a school house
shelter for horses, about \$5.00. Only skilled
labor employed in leveling, bordering and
fencing the ground, and for part of the con-
struction of the house, is included in the above
estimate, as the common labor required, or
quadrant would be, and in this case was fur-
nished by the farmer himself.

To bring this ground under cultivation and
make it habitable for a small farmer and his
family, as stated above, therefore required a
cash outlay of about \$200. In addition, in the
average instance must be included a team,
wagon, plow, harrow, haying equip-
ment, stoves, boxes and other small tools.

CROPS AND MARKETS.

The crops selected for the season of 1906
were Early Rose potatoes, White Bermuda
onions, Rockford cantaloupes, Dwarf Cham-
pion and Burpee's Quarter Century tomatoes,
and alfalfa, besides a few hills of watermelons
and melons. The yield of the crops was as fol-
lows: Potatoes, 3,000 pounds; onions, 2,500
pounds; cantaloupes, 1,000 pounds; tomatoes,
1,000 pounds; alfalfa, 1,000 pounds. The yield
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pounds; cantaloupes, 1,000 pounds; tomatoes,
1,000 pounds; alfalfa, 1,000 pounds.

Cash outlay, returns.

Seed..... \$2.88
9 Irrigations in seed bed and
8 Irrigations in field about..... 3.50
Sundries and sundry, about..... 2.50
8915 pounds of onions at 25..... \$73.24
1.50.....
Net cash returns, not de-
ducting labor..... 64.30

73.24..... \$73.24

The amount of labor expended upon this
crop was large for the area, especially at the
transplanting time. One day's team work in
preparing the land and about 32 days, men's
time, were required to bring it through, al-
though the work was not heavy and could
have been largely performed by boys. The
yield was well above the average, and the un-
tilized character of the soil, onions requiring
large amounts of organic matter in the soil to
do good results.

Early Rose potatoes, 84 acres: Seed pota-
toes planted Feb. 10-19, 1906. Beginning to
bloom April 10. Crop all harvested June 10.
Yield, 2,515 pounds. Highest price, May 21,
34c. Bulk of crop, 24c. All marketed in
Yuma.

Cash outlay, returns.

250 pounds seed-potatoes and
freight on same..... \$ 8.00
Irrigating water for seedling
used as fertilizer..... 2.88
2 Irrigations for crop..... .81
Fertilizer for seedling, includ-
ing express..... 1.00
2515 pounds of potatoes at
25-24c..... \$73.24
Net cash returns, not de-
ducting labor..... 37.15

73.00..... \$73.00

The amount of labor required for the crop
itself was about 16 working days, with team
12 days. The seedlings used as green manure
on the seedling bed, the potato ground was
given 17 irrigations. Bermuda grass, more-
over, flourished beneath the seedlings to such
an extent as to require no further irrigation
labor for cleaning up the 45 acres so fertilized.
Although the larger part of the crop came
from the seedling bed, the method of enriching the
soil proved very costly, 25 days man's time and 3
days team-work being required to put the
bania under and afterwards get rid of the
Bermuda grass. Nevertheless, the labor en-
abled could easily have been managed by a
careful farmer, as the Bermuda digging was
done in January when other work was not
urgent.

Tomatoes, Dwarf Champion and Burpee's
Quarter Century, 22 acres: Seed planted in
cold-frame, Feb. 1, 1906. Transplanted to
ground June 12-14. First ripe tomatoes, June 10.
Last of marketable crop, Sept. 8. Yield, 18,000
pounds; second crop, 1,000 pounds. Total
pounds; waste, most of which could have been
eaten, 1,000 pounds. Highest price, 10c. Bulk of
crop, 8c. Total, 1,000 pounds. Second class crop
sold locally down to 2c.

Cash outlay, returns.

Seed..... \$ 1.72
18 Irrigations, 1 acre..... 1.50
48 crates for shipments to
Tucson and Bisbee..... .65.50
18001 pounds of tomatoes at
30c to 25c..... \$624.00
Net cash returns, not de-
ducting labor..... 531.88

624.00..... \$624.00

*Not including \$14.00, failed to collect
Until the last of June this crop required but
little labor. During the shipping season,
however, four persons were employed on
about half time in picking, packing and ship-
ping the crop. The entire labor requirements
for the crop were, men's time, 81 days; women
and boys, 28 days; and team 10 days. The
harvest demand upon labor being during
July. Dwarf Champion and Burpee's Quarter

Century yielded about equally well, both be-
ing of the dwarf bushy sorts best adapted to
this climate. Barnyard manure was used un-
der the double rows, otherwise the ground
was unfertilized save by the muddy irrigating
water used.

Rockford cantaloupes, 1 acre: Seed planted
March 7-9, 1906. Cold, backward season re-
sulting in this stand equal to about three-
fourths of an acre. Crop picked July 5 to
Sept. 7. Yield 700 dozen, sold locally at from
50c to 1c a dozen.

Cash outlay, returns.

1 pound seed..... 1.00
18 Irrigations..... 8.00
780 dozen cantaloupes at 50c
to 15c..... \$144.00
Net cash returns, not de-
ducting labor..... 135.00

144.00..... \$144.00

The labor on this crop was light, but in this
case time consuming, because of inconvenient
arrangements for marketing. There were em-
ployed on the crop 31 days men's time; 8 days
women and boys; and 2 days team, not other-
wise included.

The crop was fertilized with barnyard man-
ure in about three-fourths of the hills, and, as
stated above, the ground was poor. The results
of this are therefore conservative.

Watermelons and sundry small items of
produce were sold locally to the amount of
\$15.85.

Seed and irrigating water, about \$ 2.00
Leaving a cash return of about..... 13.85

Alfalfa, 1.70 acres.

This was sown May 18
1905, yielding three cuttings of about five tons
of clean hay the first season. During the sec-
ond season, covered by this timely hint,
there were seven cuttings with a total of
about 20 tons of hay. The only cash outlay
was \$2.41 for irrigating water. The labor re-
quired was, man's time, 14 days and team
nine days, which is rather high labor require-
ment for this alfalfa on account of the small
size of the field under consideration, and lim-
ited use of machinery. This crop at 80c to
the ton, 100c, which has been the price
this season, represents a cash return of not
less than \$160 for the crop, but this hay was
used to feed the team employed on the place,
proving to be more than sufficient for that
purpose. Since a stack of about 100 tons of
alfalfa at the end of the season, the manure
from this source, being free from Bermuda
grass seed, was especially valuable for fertiliz-
ing a part of the crops grown.

Cash outlay, returns.

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THE LUMBER WASTE PROBLEM

Washington, Sept.—Five
hundred manufacturers of ex-
plosives, pulp wood and similar
products have been asked by the
National Conservation Commis-
sion for information as to all pos-
sible uses of sawdust. From this
it will be seen the Commission is
going into fine details in its in-
ventory of the natural resources
of the country. Seven thousand
lumbermen have been asked for
their opinion as to the waste of
lumber in saw mills and more
than two thousand lumber de-
alers and coopers, veneer, furni-
ture, box, vehicle and implement
manufacturers have been asked
to point out striking features of
waste in their respective lines.
Yet all this is only one part of
the general scheme of hunting
down waste which the Commis-
sion is following in making its
inventory. It is going after the
little wastes here and there,
which, added together, and put
into dollars and cents, make an
astounding total.

For instance, take the making
of veneer. At first blush it may
not seem worthy of consideration
with the manufacture of other
products mentioned. Yet, the
scarcity of the more attractive
finishing woods in the last few
years has led to the annual pro-
duction of over 1,100,000,000
square feet of veneer. This, of
course, has been made possible
only by the introduction of new
veneer-making machinery.

The use of veneer is generally
regarded as exemplifying the
scarcity of the finer woods and
typifying the complete utiliza-
tion of various kinds of woods,
yet, from one of the schedules of
the National Conservation Com-
mission it is evident that the
Commission expects to discover
great waste even in veneer man-
ufacture.

Though the word veneer carries
many meanings, from a glaze ap-
plied to pottery to the "polish"
of a man of the world, it is most
commonly employed as the name
for the thin slices of wood now
extensively used in the manufac-
ture of all sorts of articles of
use, such as wood plates, baskets
and the exterior finish of furni-
ture and wood work. The man-
ufacture of veneer in the last few
years has advanced by leaps and
bounds.

The best veneer is sawed, but
a great deal is sliced and still
more is "rotary cut." By the
last named process logs of the
desired wood are steamed until
they are soft and then fixed in a
lathe-like machine, in which they
are turned against a wood knife.

As the log rotates against the
knife, veneer of the desired thick-
ness is peeled off in a continuous
slice, as if you should pare an
apple, going deeper and deeper
at each complete turn, until
nothing is left but the core. The
center of the log left after the

veneer is cut is also called a
"core."

The woods principally used in
making veneer are red gum,
map